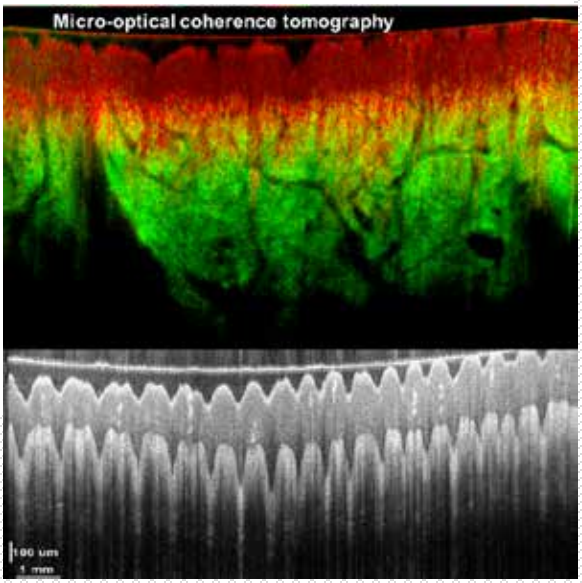
Micro-Optical Coherence Tomography: Skin Imaging and Beyond

LUX PHOTONICS CONSORTIUM SINGAPORE

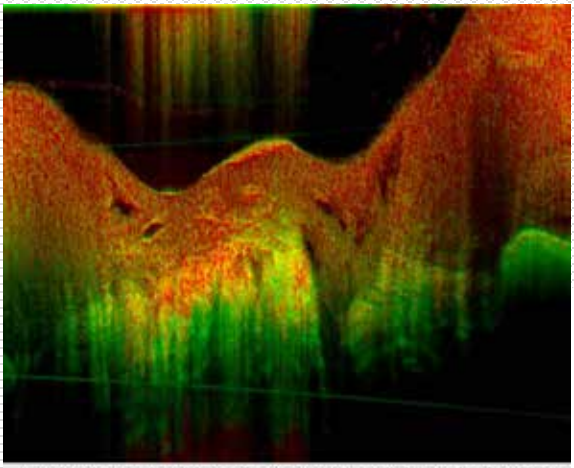
Technology Overview

§ Micro-Optical Coherence Tomography (µOCT) provides noninvasive, label-free and cellular resolution, 3D images of skin in real-time
§ Addresses the need for a noninvasive acquisition of high-resolution histological information over a large skin or tissue area
§ The unique functional capabilities of collagen fiber and blood vessel detection make it an ideal tool to assist skin disease diagnosis and evaluation of skin care strategies



Technology Features

§ Ultrahigh resolution (~1.5 µm in skin)
§ Unique collagen fiber imaging capability based on intrinsic color
§ Handheld dermatoscope for clinical use
§ Scanning range up to 10 mm x 10 mm with a speed of 13 seconds per volume



We develop and validate of non-invasive, cellular and sub-cellular resolution, natural color contrast imaging methods for disease diagnosis and life science research.

Benefits

§ Able to provide histology-like images in human noninvasively, such as intracellular extracellular structural and funtional details
§ Reduce the number of biopsies and patient burden
§ Improve the outcome of disease management by noninvasive, large area screening/survellence

Potential Applications

§ Skin care product evaluation and skin aging evaluation
§ Skin disease diagnosis
§ Anterior segment ocular imaging and disease diagnosis
§ Scientific research tool

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